

dont forms) ; thirdly, the tooth so high-crowned that its roots are only formed at a late period of life as in *Evotomys* and others ; and finally the highly specialized growing tooth that never develops roots at all.

In connection with the dental evolution of this interesting animal, it would be advisable for naturalists and sportsmen in Kashmir to notice what its food is, as compared with that of the other squirrels. Judged from its blunt claws, it probably frequents rocks and precipices rather than trees, and it is therefore possible that its ordinary food may consist of lichens, mosses, and other rock-loving plants, which, by being mixed with sand and particles of rock, would necessitate the development of such long lasting molars as it is remarkable for possessing.

Additional specimens of *Eupetaurus* would be most valuable for scientific examination, especially if of different ages, and I may be permitted to express the hope that some of the many British sportsmen who annually visit Kashmir will help to enrich either the Indian Museum in Calcutta or the National Museum at home with examples of this, the latest addition to the Mammal-fauna of our Indian Empire.

IX.—*Notes on Indian Chiroptera.*—By W. T. BLANFORD, F. R. S.

[Received April 25th ;—Read June 6th, 1888.]

In the course of last year, whilst preparing an account of the bats of India and its dependencies for a general work on Indian Mammalia, I found that, in a few instances, scraps of information are now available, in addition to the mass of facts brought together by my friend Mr. G. E. Dobson in his standard works on the order Chiroptera. In a very few cases I am obliged to differ from his nomenclature, the most important of these being the use of the generic term *Hipposiderus* instead of *Phylorhina*, and of *Xantharpyia* instead of *Cynonycteris*. The reasons for these changes I have explained at length in a paper published in the Proceedings of the Zoological Society for 1887, pp. 636, 637. Some points that I had noted have, I find, been already fully investigated by my friend Mr. J. Scully in his paper on the Chiroptera of Nepal, published in the Society's Journal for last year (Pt. II, p. 233). As some time may still elapse before my work on Mammals will be published, a short note may be useful. I have endeavoured to identify all the species noticed by Hodgson, Blyth, Kelaart, and Jerdon, a few of which, owing doubtless to the difficulty and occasionally impossibility of determining them satisfactorily, have been left unnoticed by Dobson, and,

although I have not always been successful, I do not think there are now many forms left unnoticed.

RHINOLOPHUS AFFINIS.

Besides the synonyms quoted by Dobson, the *R. rouxi* of Jerdon* and, in part, of Blyth must be referred to this species. The latter indeed was practically identified in Dobson's Catalogue of specimens in the Indian Museum, printed at the end of his Monograph of Asiatic Chiroptera. But Blyth, in his Catalogue of Mammalia, included his *R. lepidus* under *R. rouxi*, and I believe *R. lepidus* to be *R. minor*, with which it agrees in description and measurements. I shall have some further remarks to make on this when I come to *R. minor*.

Besides the *R. rubidus* and *R. cinerascens* of Kelaart (Prod. Faun. Zeyl. p. 13) referred by Dobson to *R. affinis*, there appears no reason why the *R. rammanika* of Kelaart (ib. p. 14) should not be assigned to the same species. Blyth in his catalogue placed *R. rammanika*, with, however, a mark of doubt, under his *R. rouxi*.

In both the Monograph of Asiatic Chiroptera and the British Museum Catalogue of Chiroptera a *Rhinolophus fulvidus*, Kelaart, is mentioned, and, in the first named work, the measurements of the type are given. I cannot discover any species of this name described by Kelaart, and, from Blyth's mention of *R. fulvidus* in J. A. S. B. XX, p. 182, it is probable that this term was a mistake or MS. name for *R. rubidus*. The new and unnamed species referred to in the next page (183) by Blyth was clearly that subsequently described by Kelaart as *R. rammanika*.

RHINOLOPHUS PETERSI.

This horse-shoe bat was originally described by Dobson from a specimen of unknown locality (J. A. S. B. XLI, Pt. II, p. 337). The species was subsequently obtained by Hutton at Masuri (P. Z. S. 1872, p. 700). Recently another specimen has been captured by Mr. Davison at Coonor, Nilgiri Hills, Madras Presidency, and sent to the British Museum, where it was identified by Mr. Thomas.

RHINOLOPHUS MINOR.

Mr. Scully, in his excellent account of the Chiroptera of Nepal, has identified *Rhinolophus subbadius* of Hodgson and Blyth with *R. minor*. So far as Blyth is concerned, this is precisely the same conclusion as that to which I had arrived independently, and, as Blyth's description was taken from a supposed typical specimen sent by Hodgson, it would

* Dobson classed *R. rouxi* of Temminck as a synonym of *R. affinis* and both Blyth and Jerdon took the name from Temminck.

naturally be supposed that there could be no question about the identification of Hodgson's type also. Yet, strange to say, Hodgson's *R. subbadius* belonged, not only to a different species, but to a distinct genus. A comparison of the description and measurements by Hodgson quoted by Blyth together with his own (J. A. S. B. XIII, p. 486) would alone cause suspicion. No true *Rhinolophus* can be said to have the "nasal appendage quadrate," and it would be remarkable if Blyth's measurement of the tail should be only $\frac{5}{8}$ inch when Hodgson found it to be $1\frac{1}{4}$ inches. In fact, Hodgson's *R. subbadius* was *Hipposideros bicolor* or perhaps *H. amboinensis*. It was referred to *Hipposiderus* by Hodgson himself in 1847 (J. A. S. B. XVI, p. 896) and by Gray in the 1846 British Museum Catalogue of Hodgson's collections (p. 3), and that this reference is correct is shewn by Hodgson's drawings. Evidently, in this case, Hodgson had one specimen drawn and sent another, which proved to belong to a distinct form, to the Asiatic Society's Museum in Calcutta.

But this is not all that has to be told about *R. minor*. Blyth at the same time that he described *R. subbadius* gave an account of another allied form which he called *R. lepidus*. The principal difference between the two was the form of the posterior nose-leaf, the sides of which were but slightly emarginate towards the tip in *R. subbadius*, but "so considerably emarginated" in *R. lepidus* that the tip appeared "as a narrow terminal prolongation, one-sixteenth of an inch in length."

In one of the brief notes, often full of suggestion, that Blyth was in the habit of attaching to his zoological reports, and which, for want of a complete index, are so often forgotten, both *R. subbadius* and *R. lepidus* were shewn (J. A. S. B. XXI, p. 347) to be varieties of *R. minor*, Horsfield, differing only in colour. Again in the same volume, p. 361, *R. subbadius* was identified with *R. minor*. But before his Catalogue of Mammalia was written, Blyth had either forgotten his previous remarks or changed his opinions, for in that work, whilst *R. lepidus* was assigned to *R. rouxi* (*R. affinis*), *R. subbadius* was left as a distinct species (l. c. pp. 24, 25). Curiously enough, although under *R. rouxi* in that catalogue there is a reference to "*R. minor* (?) apud nos, J. A. S. XXI, 486," the page is incorrect.

In 1872 (J. A. S. B. XLI, Pt. II, p. 337), Dobson described a horse-shoe bat as *R. garoensis*. This species, which was kept distinct in both the Monograph and Catalogue, was shewn in them to differ from *R. minor* only in having the margins of the posterior nose-leaf straight instead of concave, in short it was *R. subbadius* of Blyth with the posterior nose-leaf slightly more triangular. Finally, in 1880 (Report Brit. Assoc. p. 175), Dobson united *R. garoensis* and *R. minor*, thus arriving at the same conclusion as Blyth had reached 28 years before.

RHINOLOPHUS TRAGATUS.

This Himalayan bat was identified by Dobson (P. A. S. B. 1872, p. 208) with the European *R. ferrum-equinum*, and unquestionably the two are very closely similar. The identification has ever since been generally accepted, and, in Dobson's great works on the Chiroptera, *R. tragatus* is quoted as a synonym of *R. ferrum-equinum*.

There is, however, a distinction not often to be made out in skins, but easy of recognition in examples preserved in spirit, that suffices, I think, to justify the separation of the two forms. In *R. tragatus*, as observed long ago by Blyth (J. A. S. B. XXII, p. 409), the lower lip is traversed by three vertical grooves, as in *R. affinis*, *R. minor*, *R. macrotis*, and many other species, whilst in true *R. ferrum-equinum* there is but a single groove, as in *R. hipposiderus*, *R. pearsoni*, etc. The nose-leaf as a rule in *R. tragatus* is considerably broader than in *R. ferrum-equinum*, but there is some variation.

All the Himalayan specimens that I have been able to examine, including examples from Darjiling, Nepal, and Masuri, have three grooves. The specimens in the British Museum obtained by Mr. Scully in Gilgit agree, however, entirely with the Palæarctic form, *R. ferrum-equinum*, and have but a single mental groove.

HIPPOSIDERUS DIADEMA.

The locality Odeypore given by Dobson for this bat in the Monograph of Asiatic Chiroptera, p. 200, and repeated in Anderson's Catalogue of Mammalia in the Indian Museum, Calcutta, p. 115, is not Odeypore or Udaipur in Rájputána, but, I believe, a small state lying north-west of Sambalpur. The locality given for my own specimens "Pullundur, Central Provinces" is S. E. of Nágpur and not far from Bhandára. These localities are of some importance, being the only two in the Peninsula of India, so far as I can learn, whence this bat has been recorded, though it was obtained in abundance by Kelaart at Kandy in Ceylon, and has a wide distribution from the Himalayas to Timor and the Philippines.

HIPPOSIDERUS BICOLOR.

From the remarks made under *Rhinolophus minor*, it is evident that Mr Hodgson must have obtained one of the forms referred to this species in the Nepal Valley, I think from the figure, *H. amboinensis*. I am disposed to agree with Mr. Scully and to class *H. amboinensis* as a distinct species from *H. bicolor* (*H. fulvus*).

CÆLOPS FRITHI.

This species, originally described by Blyth from a Sundarban

specimen, and subsequently recorded by Dobson from Java and Laos (Siam), has recently been discovered by Col. Kinloch near Darjiling.

MEGADERMA SPASMA.

Blyth 36 years ago (J. A. S. B. XXI, p. 346) noticed the occurrence of this bat in Ceylon. In his Catalogue, p. 23, note, he observed that the specimens had disappeared from the Society's Museum. I well remember his lamenting the loss of several bats, the bottles having been stolen for sale and their valuable contents thrown away. The species does not appear to have been again observed east of the Bay of Bengal, and Dobson, very naturally, in his Catalogue of Chiroptera, p. 158, considers the occurrence of this species in Ceylon doubtful.

In some MS. notes which Mr. F. W. Bourdillon kindly placed at my disposal, a bat obtained from a hollow tree, at an elevation of 2700 feet above the sea near Mynall, in Travancore, was described. It was clearly a species of *Megaderma*, and the size (length $2\frac{3}{4}$ inches, forearm 2) and nose-leaf agreed much better with *M. spasma* than with *M. lyra*. There are some specimens of *M. spasma* in the British Museum labelled as from Ceylon, but their history is unknown. They have the forearm 2.1 to 2.2 inches in length. On the whole, I think it probable that *M. spasma* does inhabit Ceylon and Southern India.

NYCTOPHILUS GEOFFROYI.

This bat, which is identified by Dobson with *N. timoriensis* of Geoffroy, is an inhabitant of the Australian region, being found in Australia, Tasmania, and some of the Pacific islands. It is, however, included amongst the mammals of India (p. 48) by Jerdon, who says, "This bat, which has been found in Europe and Australia, was sent from Mussoorie by Hutton." Hutton, however (P. Z. S. 1872, p. 704), denied all knowledge of the species, and Mr. R. A. Sterndale, in his Natural History of the Mammalia of India, although he copies the description quoted by Jerdon, very naively remarks that he can find no trace of the bat in Dobson's Monograph. It is, I think, evident that Jerdon took the name and locality from Blyth's Catalogue, and that in this there has been a mistake in printing. At the end of the text in p. 36 there is printed: "Genus *Nyctophilus*, Leach, Hab. Australia. A. Specimen presented by the Sydney Institution (1845)." On the top of the next page comes:—"116, *N. Geoffroyi*, Leach, Syn. *Barbastellus pacificus*, Gray. Hab. Europe, Himalaya. A. B. Specimens in spirit, Masuri, Capt. H. Hutton (1844)." Now in all other genera in this catalogue, the name of the genus is followed by the name of the species, not by the habitat, and it is, I think, clear that "116. *N. geoffroyi*, Leach, Syn. *Barbastellus pacificus*, Gray." ought to come immediately below "Genus *Nyctophilus*, Leach" and be-

fore "Hab. Australia." This view is confirmed by the fact that a single specimen of *N. geoffroyi*, not two, presented in 1845 by the Sydney Institution, was found by Dobson in the Indian Museum (containing the specimens of which Blyth's Catalogue was a list) and recorded by him in the Catalogue of specimens printed as an Appendix to his Monograph of Asiatic Chiroptera, p. 220. The Hab. Europe, Himalaya, and record of two specimens from Masuri presented by Captain Hutton in 1844 must have referred to some other bats, and, as 116 A. in the same Catalogue of Dobson is identified with *Synotus darjelinensis*, whilst in Anderson's Catalogue 116 A. and B. are both referred to that species, it is, I think, manifest that the reference belongs to the species preceding *Nyctophilus*, namely, to *Barbastellus communis*, with which, until Dobson pointed out the difference, *Synotus darjelinensis* was supposed to be identical.

VESPERUGO NASUTUS.

The locality of this bat is given as Shikarpur, Sind. The specimen was obtained, I believe, so far as my memory serves, in the Shikarpur collectorate, not near the town, but across the Indus, a short distance east of Rori.

VESPERUGO IMBRICATUS.

There is, in the British Museum, a skin of this species sent by Blyth and labelled Calcutta. The specimen is in all probability Indian.

VESPERUGO MORDAX.

Dobson, in his "Report on Accessions to our Knowledge of the Chiroptera during the years 1878—1880," published in the Report of the British Association, 1880, p. 184, shews why the eastern form of *V. maurus* (or rather perhaps *V. savii*) should be distinguished under the name of *V. mordax*, Peters (M B. Akad. Berlin, 1866, p. 402).

In the British Museum collection there is a skin of this species labelled *V. maderaspatanus*, Elliot. This is probably the *Scotophilus maderaspatanus* of Gray's "List of the Specimens of Mammalia in the Collection of the British Museum," 1843, p. 29, a species that, like many others in the same list, has never, to the best of my belief, been described. The name is in all probability wrongly attributed to Elliot.

VESPERUGO CEYLONICUS.

Dobson, in his Catalogue, p. 222, describes a species of bat as *V. indicus* from two Mangalore specimens, and records the existence of a third specimen, labelled Madras (but very probably from the Malabar coast), in the British Museum collection. He also calls attention to the fact that *Scotophilus ceylonicus*, Kelaart, "may be identical, as the de-

scription and most of the measurements correspond closely; but the outer upper incisors are described as having two or three cusps, and the length of the tibia is given as 0·7 inch," instead of 0·55. The type too had been lost.

Now in *V. indicus*, as in *V. noctula*, "the outer incisor is hollowed out to receive the extremity of the lower canine when the jaw is closed," so that this incisor may very well be described as having two or three cusps. But Kelaart's expression is more characteristic. He says, "Upper incisors 2 pairs both indistinctly bilobed? or certainly the lateral ones are trifid." Now the inner upper incisor is bifid and in all probability the precise form of the outer upper incisor varies, according as it is worn away by the point of the lower canine. Certainly, in some skulls of *V. noctula*, 'trifid' would correctly express the form of the tooth. I think, therefore, that there should be no hesitation in recognizing Kelaart's name for the species.

VESPERUGO ABRAMUS.

Blyth in 1852 (J. A. S. B. XXI, p. 360) received several bats from Masuri, sent by Captain T. Hutton. Amongst the species supposed to be identified was the pipistrelle, which Blyth, then and subsequently, called *Myotis pipistrellus* (though the genus *Myotis* of Gray, I believe, was confined to species of *Vespertilio**). In 1853 (J. A. S. B. XXII, p. 581), Blyth pointed out that the supposed pipistrelle from Masuri differed from the true pipistrelle of Europe in colour and in the small size of the foot, which, with its claws, scarcely exceeded $\frac{3}{16}$ in.; and he proposed for this form the name *M. parvipes*, a name that is retained by Jerdon in his work on the Mammals of India, p. 48, but which is not, so far as I am aware, mentioned by Dobson. The type was lost.

Years afterwards Captain Hutton, in his paper on Himalayan bats, described a *Vesperugo micropus* (P. Z. S. 1872, p. 708). This was subsequently identified by Dobson, I believe from examination of the type, with *V. abramus*. I cannot but suspect that Blyth's *Myotis parvipes* was the same.

At the same time, the dimensions of the foot, as given by Blyth, agree more nearly with those of the true pipistrelle, and the only reason for not identifying *M. parvipes* with *V. pipistrellus* is that this species has not been recognized amongst Hutton's collections, nor is it known to occur in the Himalayas east of Kashmir, where it was obtained by Stoliczka (Yarkand Mission Mamm. p. 11). It is also possible that

* The genus was proposed in 1842 (A. M. N. H. X, p. 258). The examples quoted were *V. murinus*, *V. bechsteini*, and *V. nattereri*, all belonging to the second section of the genus in Dobson's Catalogue.

Myotis parvipes may have been a true *Vespertilio*. It is to be regretted that so imperfect a description was given.

I had expected to be obliged to restore the name of *coromandelicus* by which this bat was so long and so widely known in India, but, so far as I can ascertain, no Latin name was given by F. Cuvier, who merely called a small bat, but doubtless this species, *Vespertilion de Coromandel*. (Nouv. Ann. du Muséum d' Histoire Naturelle I, p. 21).

VESPERUGO PIPISTRELLUS.

In the Society's Journal for 1857 (Vol. XX, p. 159, note), Mr. Blyth identified a spirit-specimen sent by Mr. Hodgson of *Vespertilio pallidiventris* with the pipistrelle, after comparing the former with British specimens of the latter. In Blyth's Catalogue, however, although the locality "Himalaya?" is assigned to the pipistrelle, there is no mention of *Vespertilio pallidiventris*, and the figure of the latter in Hodgson's MS. drawings is very unlike the pipistrelle. Scully is doubtless right in his identification of *V. pallidiventris* with *V. nepalensis*. I have examined Hodgson's drawings, and the only reason for doubt in the shortness of the tragus in the figure.

VESPERUGO KUHLI.

I think *Pipistrellus lepidus*, Blyth (J. A. S. B. XIV, p. 340), from Kandahar, must be identical with *Vesperugo leucotis*, Dobson, now considered by the last named writer a variety of *V. kuhli*. The description agrees, and the species is common in Sind, Baluchistan, and Southern Persia, consequently it is very likely to be the common small bat of Kandahar.

SCOTOPHILUS KUHLI.

I think it is a matter for serious regret that the late Dr. Peters, when he had ascertained, by an examination of Leach's type of *Scotophilus*, what the genus really was, did not at once propose a new generic term. Leach in 1822 (Trans. Linn. Soc. XIII, p. 71) described a new genus and species of bat under the name of *Scotophilus kuhli*. The name *Scotophilus* was apparently left in oblivion until Dr. Gray in 1838 (Mag. Zool. Bot. II, p. 497) applied it to a very miscellaneous assemblage of bats, comprising the *Vespertilio temmincki* of Horsfield and the *Scotophilus kuhli* of Leach (re-named *S. leachi*) together with a large number of species of *Vesperugo*. It is only fair to say that Leach's account of the dentition in the young *Scotophilus* agreed in some respects with that of *Vesperugo*, but not with that of the type represented by *Vespertilio temmincki* of Horsfield.

However Gray's paper led to a wide use of the term in an erroneous sense, and, when, therefore, Peters, in 1866, examined Leach's original type and found it to be an immature example of the form then generally known as *Nycticejus temmincki*, with milk teeth, it is unfortunate that the name *Scotophilus* was not abandoned, as it might well have been, for Leach's description was erroneous and misleading.

Dobson has recapitulated the facts above mentioned (P. Z. S. 1875, p. 368), and I believe he was precisely of the same opinion as myself, but rather than propose a new name he accepted *Scotophilus*. But this has led to another difficulty. The specific name *temmincki*, applied by Horsfield to one of the commonest, most widely spread, and best known of oriental bats, could scarcely be dropped without inconvenience, so the common yellow bat stands in Dobson's works as *Scotophilus temminckii*. If, however, the examination of the type is sufficient for the identification of the genus, the species may be determined in the same manner. This Dobson acknowledges, but gets over the difficulty by leaving the question of the adult form to which the young type belongs open.

Now it is true that in many genera of bats it would be very difficult, perhaps impossible, to identify the young, but the present is not one of those instances. There are but two other species that have the same peculiar and unmistakable tragus as *S. temminckii*, viz., *S. borbonicus* and *S. gigas* both African. In both of these the upper incisors have a very differently formed cingulum. By cutting down slightly on the gum the permanent incisors have been examined in Leach's type by Mr. Oldfield Thomas, and shewn, as was anticipated, to be those of *S. temmincki*. It was of course much more probable that Leach's specimen should belong to this very common Indian and Malay form than to a comparatively rare African species. If, therefore, we are guided by type specimens, the specific name *kuhli* has priority over *temmincki*, and we must abandon a well known specific name for an unknown one. The only alternative is to discard the genus *Scotophilus*, and this is now scarcely practicable. The species must therefore stand in future as *Scotophilus kuhli*.

SCOTOPHILUS ORNATUS.

Nycticejus nivicolus, Hodgson (A. M. N. H. 1855, XVI, p. 44), proves by a comparison of his MS. drawings with specimens of *Scotophilus ornatus* (Blyth) to be that species. Blyth's name has priority.

S. ornatus, according to Jerdon, is found at low elevations in warm Himalayan valleys, whilst the name of *Nycticejus nivicolus* indicates a very different habitat. But Hodgson only knew that the bat named by him came from the interior of the Sikkim Himalaya, near snow, and it

may have been obtained from a deep valley at no great elevation above the sea.

HARPYIOCEPHALUS LEUCOGASTER.

There is in the British Museum a skin of this species procured by Hodgson near Darjiling.

VESPERTILIO HASSELTII.

A specimen from Burma, the exact locality not recorded, is in the British Museum.

VESPERTILIO LONGIPES.

There can, I think, be very little, if any, doubt that this small bat described by Dobson in 1872 from the caves of Bhima Devi, Kashmir, is the same form as was named by Blyth *Myotis theobaldi* in 1855 (J. A. S. B. XXIV, p. 363). Blyth's types were obtained by Mr. Theobald from limestone caves near Matar Nag, N. of Islamabad (J. A. S. B. XXII, p. 581), and were at first referred by Blyth to *Myotis pallidiventris*, Hodgson, but subsequently distinguished. The types were afterwards lost. The measurements, the large feet, and the habitat render it nearly certain that the two forms are identical, but it is impossible to adopt Blyth's name without clearer evidence, for his description is insufficient, and he declares the species to be extremely close to the pipistrelle, which *V. longipes* is not.

VESPERTILIO MEGALOPUS.

The collection containing the type of this bat was supposed to be from the Gaboon, West Africa. The known species in the collection, however, prove to be from Kashmir, and there is every probability that *V. megalopus* is from the same country.

MYOTIS BERDMOREI, Blyth.

This was a name given by Blyth in his Catalogue, p. 35, to three specimens of a bat in spirit received from Major Berdmore in 1859. The description of the species appeared in the Society's Journal for that year (J. A. S. B. XXVIII, p. 293). The specimens were in all probability obtained at or near Shivé Gyeng on the Sittoung (or Sitang) River, Burma. The types appear to have been subsequently lost, as they are not mentioned in Dobson's Catalogue at the end of his monograph of Asiatic Chiroptera, or in Anderson's Catalogue.

In this case I am unable to suggest what the species can have been. It was said to resemble the pipistrelle in size and structure, but the fore-

arm was $1\frac{1}{2}$ in. long, considerably more than in *Vesperugo pipistrellus*. The species might have been founded on large individuals of *V. abramus*, but, as specimens of that form were recorded as being received at the same time and referred to a distinct genus and species (*Scotophilus coromandelianus*), this is scarcely probable. It is far more likely that *Myotis berdmorei* was a true *Vespertilio*, and it may have been *V. montivagus* of Dobson or some other ally of *V. mystacinus*. But for the fact that the species was referred to *Myotis*, a genus composed of forms with the foot only in part free from the wing membrane, I should be inclined to suspect that *M. berdmorei* was identical with true *Vespertilio adversus* of Horsfield (not of Temminck). The description and measurements agree very well, and it is highly probable that this wide-ranging species occurs in Burma. Moreover, as has just been shewn, there is every reason to suspect that another form referred by Blyth to *Myotis* (*M. theobaldi*) belongs to *Vespertilio* of the same section as *V. adversus*.

VESPERTILIO DOBSONI.

I trust that the types of this species will be carefully re-compared with *V. formosus*. Judged from Anderson's description Cat. Mam. Indian Museum, p. 143, *V. dobsoni* may very possibly be merely a large variety. The difference is not nearly so great as in the case of *Scotophilus kuhli* (*S. temmincki*) and *S. heathi*, which are connected by intermediate forms.

KERIVOULA HARDWICKII.

There is in the British Museum a specimen of this species obtained by Mr. Theobald in the Punjab, and another from Ceylon.

KERIVOULA PAPILLOSA.

This bat was included by Jerdon amongst the mammals of India, but Dobson gives only Java as a locality. A specimen was sent from Calcutta by Mr. Pearson and is now in the British Museum. Tomes has also recorded a specimen from Ceylon. Neither locality is thoroughly authenticated, but for the present the species may, I think, be retained in the Indian list.

MINIOPTERIS SCHREIBERSI.

Dobson has shewn that *Vespertilio fuliginosa* of Hodgson is this species, consequently *Scotophilus fuliginosus*, Jerdon, Mammals, p. 36, should be the same, and Jerdon professes to copy Hodgson's description. But the characters given are very different and must apply to some other bat.

In conclusion, it may be useful to give the correct names, or, where the species have not been determined with certainty, the approximate identifications, of the bats enumerated in Jerdon's Mammals. I know from experience how impossible it is to identify the species from the descriptions, and any one who consults Sterndale's Mammalia of India will see what a source of confusion Jerdon's names have proved. The numbers are Jerdon's. In the few cases in which Dobson's specific names differ from mine I have quoted both.

BATS IN JERDON'S MAMMALS.

<i>Jerdon's Name.</i>	<i>Corrected Name.</i>
No. 12. <i>Pteropus edwardsi</i>	<i>P. medius.</i>
No. 13. <i>P. leschenaultii</i>	<i>Xantharpyia amplexicaudata</i> (<i>Cynonycteris amplexicaudata</i> , Dobson).
No. 14. <i>Cynopterus marginatus</i>	<i>C. marginatus.</i>
No. 15. <i>Megaderma lyra</i>	<i>M. lyra.</i>
No. 16. <i>M. spectrum</i>	<i>M. lyra.</i>
No. 17. <i>Rhinolophus perniger</i>	<i>R. luctus.</i>
No. 18. <i>R. mitratus</i>	<i>R. mitratus.</i>
No. 19. <i>R. tragatus</i>	<i>R. tragatus.</i> (<i>R. ferrum-equinum</i> , Dobson).
No. 20. <i>R. pearsoni</i>	<i>R. pearsoni.</i>
No. 21. <i>R. affinis</i>	<i>R. affinis.</i>
No. 22. <i>R. rouxi</i>	<i>R. affinis.</i>
No. 23. <i>R. macrotis</i>	<i>R. macrotis.</i>
No. 24. <i>R. subbadius</i>	<i>R. minor.</i>
No. 25. <i>Hipposideros armiger</i>	<i>Hipposiderus armiger</i> (<i>Phyllorhina armigera</i> , Dobson).
No. 26. <i>H. speoris</i>	<i>H. speoris.</i>
No. 27. <i>H. murinus</i>	<i>H. bicolor.</i>
No. 28. <i>H. cinereus</i>	<i>H. bicolor.</i>
No. 22. <i>Cælops frithii</i>	<i>Cælops frithii.</i>
No. 30. <i>Rhinopoma hardwickii</i>	<i>Rhinopoma microphyllum.</i>
No. 31. <i>Taphozous longimanus</i>	<i>Taphozous longimanus.</i>
No. 32. <i>T. melanopogon</i>	<i>T. melanopogon.</i>
No. 33. <i>T. saccolaimus</i>	<i>T. saccolæmus.</i>
No. 34. <i>Nyctinomus plicatus</i>	<i>Nyctinomus plicatus.</i>
No. 35. <i>Scotophilus serotinus</i>	<i>Vesperugo serotinus.</i>
No. 36. <i>S. leisleri</i>	<i>V. leisleri.</i>
No. 37. <i>S. pachyomus</i>	<i>V. serotinus.</i>

Jerdon's Nams.	Corrected Name.
No. 38. <i>S. coromandelianus</i>	<i>V. abramus</i> .
No. 39. <i>S. lobatus</i>	<i>V. kuhli</i> .
No. 40. <i>S. fuliginosus</i>	? <i>Miniopterus schreibersi</i> .
No. 41. <i>Noctulinia noctula</i>	<i>Vesperugo noctula</i> .
No. 42. <i>Nycticejus heathii</i>	<i>Scotophilus kuhli</i> (<i>S. temmincki</i> , Dobson).
No. 43. <i>N. luteus</i>	<i>S. kuhli</i> .
No. 44. <i>N. temmincki</i>	<i>S. kuhli</i> .
No. 45. <i>N. castaneus</i>	<i>S. kuhli</i> .
No. 46. <i>N. atratus</i>	<i>Vesperugo atratus</i> .
No. 47. <i>N. canus</i>	<i>V. kuhli</i> .
No. 48. <i>N. ornatus</i>	<i>Scotophilus ornatus</i> .
No. 49. <i>N. nivicolus</i>	<i>S. ornatus</i> .
No. 50. <i>Lasiurus pearsoni</i>	<i>Harpyiocephalus harpyia</i> .
No. 51. <i>Murina swillus</i>	<i>H. cyclotis</i> .
No. 52. <i>M. formosa</i>	<i>Vespertilio formosus</i> .
No. 53. <i>Kerivoula picta</i>	<i>Kerivoula picta</i> .
No. 54. <i>K. pallida</i>	<i>Vespertilio formosus</i> .
No. 55. <i>K. papillosa</i>	<i>Kerivoula papillosa</i> .
No. 56. <i>Vespertilio caliginosus</i>	<i>V. muricola</i> .
No. 57. <i>V. siligorensis</i>	<i>V. mystacinus</i> .
No. 58. <i>V. darjilingensis</i>	? <i>V. mystacinus</i> .
No. 59. <i>V. blythii</i>	<i>V. murinus</i> .
No. 60. <i>V. adversus</i>	<i>V. caliginosus</i> .
No. 61. <i>Myotis murinus</i>	<i>V. murinus</i> .
No. 62. <i>M. theobaldi</i>	? <i>V. longipes</i> .
No. 63. <i>M. parvipes</i>	doubtful, probably <i>Vesperugo abra-</i> <i>mus</i> or <i>V. pipistrellus</i> .
No. 64. <i>Plecotus auritus</i>	<i>Plecotus auritus</i> .
No. 65. <i>Barbastellus communis</i>	<i>Synotis darjilingensis</i> .
No. 66. <i>Nyctophilus geoffroyi</i>	<i>Nyctophilus timoriensis</i> (not Indian, included by mistake).